# CHAPTER 7 - CONCLUSIONS

Analysis of the key potential impacts to water resources in the CBM emphasis area and especially the Montana portion of the PRB leads to the following conclusions. These conclusions are aimed toward water resource issues raised in public scoping comments as part of this EIS process.

1. **Water Conservation:** CBM production is calculated to drawdown the water level on coal beds being exploited; natural gas cannot be produced unless the water level is effectively pumped down. If these coal beds are also used for water in nearby wells, water levels in the nearby water wells may also be drawn down. These impacts are part of the CBM production process. The impacts will likely be variable in magnitude and geographic extent.

2. **Groundwater Quality and Quantity:** Many water wells in the Montana portion of the PRB are completed in shallow alluvial aquifers and deeper Cretaceous sands. These aquifers are likely isolated from impact by CBM development. Local conditions could, however, show the presence of physical connection between these sands and the CBM reservoirs.

3. **Wastewater Disposal and Discharge**: Quality of CBM water is extremely variable and must be considered before discharge is permitted. Current production carries water with only limited beneficial use that must be managed so as to fully protect surface water and soil resources. Some coal beds in the Montana portion of the PRB, however, contain high quality water that can be used for animal husbandry or irrigation. Water management alternatives will be driven by produced water quality.

4. **Water Rights**: Water well and spring mitigation agreements will aid responsible CBM development while protecting water rights. As coal aquifer water levels are drawn down, methane may be liberated. This could happen at local water wells and monitoring wells adjacent to CBM production. Mitigation may be necessary depending on local conditions. However, determination of the adequacy of areas requiring mitigation agreements will likely require an active groundwater monitoring program that would need to include field reconnaissance to assess potential impacts to natural springs and other vulnerable resources.

5. **Water Resources Impacts:** The groundwater volume in the coals of the Powder River Basin is sufficiently large that even full-field CBM development will likely not exhaust the resource. However, areas with substantial CBM development could experience adverse impacts that could include water wells becoming dry, reduced flow from springs, seeps from unlined impoundments, impacts to soils irrigated with water produced from CBM wells (Soils Technical Report), and degradation of surface water.